RESEARCH REPORT

Influence of family type and parenting behaviours on teenage sexual behaviour and conceptions

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Background: Longitudinal data were used to explore relations between teenage pregnancy, sexual behaviour, and family type. The study examined whether students from lone parent and/or teenage mother initiated families more commonly report sex, lack of contraception at first sex, and/or conceptions by age 15/16, and whether such associations can be explained by low parental strictness, difficult parent-child communication, and/or low parental input into sex education. Up to date longitudinal UK research on family influences on conceptions is lacking, as is longitudinal research on family influences on sexual behaviour. No previous studies have comprehensively examined effects of parenting behaviours. Unlike previous research, this study tested theories suggesting that parenting deficits among lone parent and teenage initiated families increase risk of teenage pregnancy among their children.
Methods: Secondary analysis of data from a trial of sex education.
Results: Girls and boys from lone parent families or having mothers who were teenagers when they were born were more likely to report sex but not lack of contraception at first sex by age 15/16. Girls and boys with mothers having them as teenagers, and boys but not girls from lone parent families, were more likely to report being involved in conceptions by age 15/16. Only the association between teenage mother family and girls' conceptions was reduced by adjusting for a parenting behaviour measure.
Conclusions: Students from lone parent families or having mothers who were teenagers when they were born are more likely to report early sexual debut and conceptions by age 15/16, but this is not generally explained by parenting style.

This paper examines whether young people from lone parent families and/or those initiated by teenage mothers are at increased likelihood by age 15/16 of having sex, not using contraception at first sex, and initiating pregnancies. The paper also explores whether any such associations might be explained by parental behaviours.

Previous studies report associations between lone parent family and teenage motherhood among British girls born in 1958 and 1971.[1 2] However, more recent studies suggest that, adjusting for socioeconomic status (SES), lone parent family was associated with teenage motherhood among girls born between 1950 and 1976 but not between 1976 and 1984.[3] No UK studies have reported on recent male cohorts. One reported on a 1958 birth cohort, for which no association was found between lone parent family and teenage fatherhood.[4] Recent non-UK studies report associations between lone parent family and teenage pregnancy among girls but do not examine boys.[5 6] Studies of UK girls born in 1958 and 1970 report associations, adjusting for SES, between having a young mother and becoming a teenage mother.[3 7] More recent non-UK studies suggest such associations among young men and women are largely explained by socio-economic confounding.[6 8 9]

Previous UK research reports associations between lone parent family and early sexual debut but not contraception use at first sex. However, these rely on cross sectional retrospective data.[10] In contrast, US longitudinal studies report associations between lone parent family and early sexual intercourse and non-use of contraception among boys/girls.[11]

Previous UK studies have examined whether parental behaviours explain associations between family type and sexual behaviour, but not pregnancy. They report that adjustment for self reported maternal strictness has no effect on the association between lone parent family and age of debut among a 1971–1976 cohort.[12] Non-UK studies are not comprehensive, but suggest that mother reported strictness mediates the association between lone parent family and girls' teenage pregnancy,[5] and lack of strict parenting and poor parent/child communication about pregnancy/contraception do not explain the intergenerational transmission of teenage parenting.[9]

Many of the above studies are influenced by the work of Lewis,[13] Joseph,[14] and Murray.[15 16] This influence is however implicit, thus disconnecting empirical from theoretical work. Lewis, Joseph, and Murray view young, unmarried child-bearing negatively, it resulting from inadequate parenting within families not involving two married adults.[15 17] Unlike those writing about multidimensional ''cycles'' of disadvantage,[18] Lewis *et al* argue family effects are largely independent of SES.[17 19] The influence of these theories is twofold. Firstly, empirical studies seek to establish what independent effect family type has on likelihood of teenage pregnancy adjusting for SES. Secondly, studies categorise family types in terms of ''deficits'' in comparison with the ''model'' family of two married parents,[5] rather than consider families' attributes, such as ''grandparental participation in childrearing''. This study's research questions, like those reviewed above, are informed by the work of Lewis *et al*. However, this is done explicitly to test the validity of these theories in understanding influences on teenage conception. The hypotheses to be tested are, firstly, that young people from lone parent and teenage mother families are, adjusting for SES, more likely to have sex, not use contraception at first sex, and initiate a pregnancy by age 15/16 than those from other families, and, secondly, that parenting behaviours characterised by low strictness, difficult communication, and low input into sex education explain these associations.

METHODS

We analysed baseline and two sets of follow up data collected from students in two school year cohorts in 27 mixed sex comprehensive schools in central/southern England within a

Table 1 Description of the sample in terms of key measures

		Frequencies			
		Girls		Boys	
Measure		Baseline	Follow up 1	Baseline	Follow up 1
Number of parents in household	Lone parent	812 (20.04)	776 (20.83)	820 (19.78)	722 (18.97)
	Two parent	3240 (79.96)	2949 (79.17)	3325 (80.22)	3084 (81.03)
Mother's age at participant's birth	>20	3594 (94.45)	NA	3213 (93.40)	NA
	⩽20	211 (5.55)	NA	227 (6.60)	NA
Parental strictness	Much more/a bit more easygoing	1280 (32.17)	NA	1389 (33.83)	NA
	About the same as others	1564 (39.31)	NA	1403 (34.17)	NA
	Much more/a little more strict	1135 (28.52)	NA	1314 (32.00)	NA
Communication with parents	Difficult	1264 (30.17)	1311 (33.17)	1688 (38.69)	1827 (43.91)
	Easy	2925 (69.83)	2641 (66.83)	2675 (61.31)	2334 (56.09)
Parental involvement in sex education	No	1832 (43.65)	2243 (56.78)	2543 (57.95)	2887 (69.65)
	Yes	2365 (56.35)	1707 (43.22)	1845 (42.05)	1258 (30.35)
Housing tenure	Non-privately owned	1031 (28.22)	NA	1083 (28.19)	NA
	Privately owned	2623 (71.78)	NA	2759 (71.81)	NA
Parental employment	Neither parent/guardian in full/part time employment	350 (8.74)	NA	307 (7.49)	NA
	One or more parent/guardian in full/part time employment	3656 (91.26)	NA	3791 (92.51)	NA

cluster trial of sex education, 14 schools in the intervention and 13 in the comparison arm. Schools were representative of England in terms of educational attainment and SES. Initial data were collected in classrooms by self completion questionnaires in 1997 when students were aged 13/14. Follow ups occurred one and then 2.5 years later when students were 14/15 and 15/16 respectively. Of students eligible, 92% (8766) completed baseline questionnaires, 82% (7770) at first follow up and 70% (6656) at second follow up. Parental consent was sought for participation. The study was approved by University College London ethics committees and has been reported in full elsewhere.[20]

We examined two primary exposures. Lone parent family was measured using students' responses to the question ''who do you live with at home?'' at baseline/follow up 1. Those not indicating they lived with a father/stepfather and mother/stepmother were categorised as from a lone parent family, excluding those living in care/fostering. Teenage mother initiated family was measured using responses to a baseline question about mother's age. Those whose mother's age minus their own was less than 20 were categorised as coming from such a family. We examined confounding by SES using two binary baseline indicators; one involved self reported non-privately owned housing, and the other parental unemployment. Both are valid indicators of SES.[21 22]

Regarding parental behaviours, parental strictness was categorised according to students' baseline reports on parental attitudes to their going out. Those reporting parents ''a bit'' or ''much more'' easygoing were compared with those reporting ''a bit''/''much more'' strict and those reporting ''about the same as other parents'', excluding young people not wanting to go out. Difficult parent-child communication, a binary measure, indicated students reporting they found it ''quite'' or ''very difficult'' to communicate with both parents or one in the case of lone parent families. Low parental input into sex education was similarly measured via students reporting parents were not among important knowledge sources.

In terms of outcomes, we examined heterosexual sexual intercourse (henceforth termed sex) by age 15/16 (follow ups 1 and 2) and non-use of contraception at first sex (follow ups 1 and 2) as indicators of the likelihood of conceptions, as well as examining conceptions among girls and boys' partners (follow up 2). Because student feedback indicated they could answer questions about sex more honestly with age, if a later response to a question about experience of sex contradicted earlier ones, the later response was treated as definitive.

Our first analytical aim was to examine whether our primary exposures, lone parent and teenage mother initiated family types, were associated with our outcomes in bivariate analysis and after adjusting for SES. Our second aim was to

Table 2 Bivariate association between family types/parental behaviours and outcomes: girls

		First sex			No contraception at first sex			Pregnancy	
Exposures		By follow up 1% (n) (n = 448)	Between follow up 1 and 2*% (n) (n = 680)	Overall OR follow up 1 and 2 combined (95% CI)	By follow up 1% (n) (n = 86)	Between follow up 1 and 2*% (n) (n = 103)	Overall OR follow up 1 and 2 combined (95% CI)	By follow up 2% (n) (n = 83)	Overall OR follow up 1 and 2 combined (95% CI)
Number of parents in household	Two parent	11.48 (297)	25.69 (447)	1	23.26 (60)	15.33 (67)	1	2.86 (58)	1
	Lone parent	17.86 (100)	37.11 (141)	1.68 (1.42,1.98)	17.58 (16)	12.86 (18)	0.76 (0.55,1.04)	3.59 (17)	1.26 (0.70,2.28)
Mother's age at participant's birth	⩾20	12.79 (359)	27.72 (547)	1	20.19 (63)	14.53 (78)	1	2.88 (67)	1
	<20	22.60 (33)	50.00 (44)	2.13 (1.49,3.04)	25.00 (8)	15.37 (61)	1.45 (0.70,3.03)	5.79 (7)	2.02 (0.89,4.58)
Parental attitude to going out	Much more/a little more strict	12.81 (128)	26.38 (187)	1	18.97 (22)	14.52 (27)	1	2.91 (24)	1
	About the same as others	11.09 (141)	27.74 (253)	0.97 (0.83,1.14)	24.80 (31)	14.98 (37)	1.20 (0.80,1.79)	2.78 (29)	0.95 (0.51,1.77)
	Much more/a bit more easy going	16.75 (134)	32.83 (173)	1.38 (1.16,1.65)	17.54 (20)	15.88 (27)	1.04 (0.68,1.61)	3.07 (21)	1.06 (0.58,1.92)
Difficulty of parent-child communication	Easy	12.94 (297)	26.22 (404)	1	20.61 (54)	15.37 (61)	1	2.24 (40)	1
	Difficult	12.73 (120)	30.70 (210)	1.13 (0.98,1.30)	22.86 (24)	14.56 (30)	1.00 (0.68,1.49)	4.39 (37)	2.02 (1.31,3.10)
Parental involvement in sex education	Yes	12.57 (235)	26.34 (260)	1	19.63 (42)	13.39 (34)	1	2.81 (32)	1
	No	13.41 (185)	28.54 (353)	1.12 (0.97,1.29)	22.86 (24)	16.67 (58)	1.27 (0.86,1.87)	3.03 (45)	1.07 (0.73,1.55)
Housing tenure	Privately owned	10.16 (214)	26.46 (407)	1	20.00 (61)	15.04 (60)	1	2.44 (43)	1
	Non-Privately owned	22.08 (159)	35.90 (154)	1.95 (1.62,2.34)	31.82 (14)	15.79 (24)	1.18 (0.83,1.69)	4.64 (27)	1.99 (1.17,3.38)
Parental Employment	One or more	11.95 (342)	27.65 (563)	1	20.00 (61)	15.50 (86)	1	2.84 (68)	1
	Neither	21.40 (55)	30.19 (48)	1.55 (1.11,2.17)	31.82 (14)	17.39 (8)	1.60 (0.96,2.59)	2.94 (6)	1.03 (0.52,2.05)

*Of students who had not sex by first follow up.

Table 3 Bivariate association between family types/parental behaviours and outcomes: boys

Exposures		Sex			No contraception at first sex			Pregnancy	
		By follow up 1% (n) (n = 435)	Between follow up 1 and 2*% (n) (n = 501)	Overall OR follow up 1 and 2 combined (95% CI)	By follow up 1% (n) (n = 68)	n = 71 Between follow up 1 and 2*% (n)	Overall OR follow up 1 and 2 combined (95% CI)	By follow up 2% (n) (n = 66)	Overall OR follow up 1 and 2 combined (95% CI)
Number of parents in household	Two parent	11.77 (307)	19.03 (350)	1	17.19 (49)	13.57 (46)	1	1.99 (41)	1
	Lone parent	13.71 (78)	25.91 (85)	1.32 (1.08,1.62)	16.44 (12)	21.25 (17)	1.30 (0.96,1.77)	4.37 (17)	2.24 (1.23,4.08)
Mother's age at participant's birth	⩾20	12.12 (299)	19.32 (332)	1	17.75 (49)	13.04 (42)	1	2.18 (43)	1
	<20	20.67 (31)	29.21 (26)	1.82 (1.29,2.55)	20.69 (6)	11.54 (3)	1.07 (0.61,1.88)	6.19 (7)	2.99 (1.11,8.05)
Parental attitude to going out	Much more/a little more strict	11.62 (124)	19.39 (146)	1	17.36 (21)	17.61 (25)	1	2.09 (18)	1
	About the same as others	12.01 (131)	19.50 (147)	1.03 (0.85,1.25)	16.67 (20)	11.35 (16)	0.76 (0.41,1.40)	2.37 920)	1.15 (0.55,2.42)
	Much more/a bit more easygoing	15.18 (141)	24.72 (154)	1.36 (1.15,1.61)	19.05 (24)	14.00 (21)	0.92 (0.55,1.53)	3.10 (23)	1.50 (0.70,3.18)
Difficulty of parent-child communication	Easy	12.59 (255)	20.00 (253)	1	15.45 (36)	14.63 (36)	1	2.64 (38)	1
	Difficult	11.62 (149)	19.65 (204)	0.95 (0.82,1.09)	21.13 (30)	13.47 (26)	1.15 (0.76,1.72)	1.86 (22)	0.69 (0.36,1.33)
Parental involvement in sex education	Yes	12.41 (172)	18.54 (127)	1	17.20 (27)	15.45 (19)	1	2.53 (20)	1
	No	12.16 (236)	20.60 (334)	1.06 (0.91,1.23)	18.10 (40)	14.37 (46)	0.99 (0.50,1.97)	2.19 (40)	0.84 (0.45,1.57)
Housing tenure	Privately owned	11.87 (254)	20.43 (311)	1	15.81 (37)	14.29 (43)	1	2.10 (36)	1
	Non-privately owned	13.89 (104)	21.34 (102)	1.13 (1.03,1.24)	23.47 (23)	17.00 (17)	1.45 (0.92,2.30)	3.00 (17)	1.45 (0.78,2.73)
Parental employment	One or more parent/ guardian in full/part time employment	11.81 (347)	19.75 (409)	1	16.62 (54)	14.65 (58)	1	2.16 (51)	1
	Neither parent/guardian in full/part time employment	16.36 (35)	21.64 929)	1.20 (0.92,1.56)	26.67 (8)	14.29 (4)	1.43 (0.84,2.45)	4.55 (7)	2.29 (1.14,4.59)

*Of students who had not sex by first follow up.

examine the plausibility of our measures of parenting behaviours in explaining any associations we found between our primary exposures and outcomes. To do this, we firstly examined whether parenting measures were themselves associated with our outcomes in bivariate analysis. Where they were, we then examined the effect of adjusting for these parenting measures on any associations we had found between our primary exposures and outcomes, also controlling for SES. Any substantial change in the association between the primary exposure and the outcome upon inclusion of the parenting measures would provide evidence in support of the importance of parenting measures in explaining associations between family type and our outcomes. All analyses were done separately for boys and girls.

In analysis of first sex, measures of all covariates are taken from baseline questionnaires to examine associations with sex by first follow up. In cases where sex has not occurred by first follow up, the influence on sex between follow up 1 and 2 of covariates is examined, using measures of covariates at first follow up where available and baseline where not. Similarly, with regard to condom use at first sex, measures of covariates are taken at baseline where sex has occurred by first follow up, and at first follow up where sex occurs between first and second follow up if the measures of covariates appear in that questionnaire and at baseline if not. In the analysis of pregnancy, measured only at second follow up, measures of covariates are taken at first follow up where available and at baseline where not. To ensure all exposures were measured before outcomes, we excluded from analysis students sexually active at baseline. Because data were from students involved in a trial, we examined whether there were interactions between each exposure, outcomes, and trial arm. In their associations with our outcomes, we also looked for any interactions between: each exposure and wave of follow up; the two exposures with each other; and each exposure and each measure of SES. Our analysis used logistic regression models. Within school correlation was accounted for by using the generalised estimating methodology of Liang and Zeger[23] with an exchangeable correlation structure and robust standard errors. All analysis was performed in Stata 7.

RESULTS

Frequencies of variables

About a fifth of boys and girls lived in lone parent households and about 1 in 20 reported a mother who was herself a teenager when she gave birth to them (table 1). About a third

Table 4 Association between family type measures and our outcomes, adjusted for SES and specific parental behaviours

Sex of participants	Association found significant in bivariate analysis	OR for this association after adjusting for SES	Parental behaviour measures associated with outcome in bivariate analysis	Effect of additional adjustment for potential mediators
Girls	Lone parent family and sex by follow up 2	1.39 (1.13, 1.70)	Low parental strictness	1.36 (1.10, 1.68)
			Difficult parent-child communication	1.41 (1.15, 1.72)
			Low parental involvement in sex education	1.39 (1.13, 1.71)
	Mother <20 family and sex by follow up 2	1.72 (1.20, 2.46)	Low parental strictness	1.77 (1.26, 2.49)
			Difficult parent-child communication	1.67 (1.15, 2.43)
			Low parental involvement in sex education	1.72 (1.18, 2.49)
	Mother <20 family and conceptions by follow up 2	1.53 (0.39, 4.83)	Difficult parent-child communication	0.94 (0.22, 4.08)
Boys	Lone parent family and sex by follow up 2	1.23 (0.98, 1.55)	Low parental strictness	1.20 (0.93, 1.55)
	Mother <20 family and sex by follow up 2	1.73 (1.17, 2.55)	Low parental strictness	1.75 (1.17, 2.61)
	Lone parent family and conceptions by follow up 2	1.65 (0.81,3.33)	NA	NA
	Mother <20 family and conceptions by follow up 2	2.08 (0.64,6.79)	NA	NA

of boys and girls reported low parental strictness and difficult communication with parents. Almost two thirds of boys reported that parents were not a source of information about sex, this being somewhat lower among girls. About a third of students were classified as of low SES by housing tenure and about a tenth according to parental unemployment. Between baseline and follow up 1, 12.95% (451) of girls and 12.03% (438) of boys had sex, of whom, respectively, 22.03% and 16.75% did not use contraception on that occasion. Between follow up 1 and 2, a further 28.25% (685) of girls and 20.09% (506) of boys had sex, of whom, respectively, 15.30% and 14.55% did not use contraception. Conceptions were reported by 2.88% (83) of girls, and partner's conceptions by 2.40% (69) of boys by follow up 2. We found no evidence of interactions between any of our exposures and trial arm or follow up wave. Data from both arms are reported together. While exposure specific rates of first sex and non-use of contraception at first sex are reported separately for follow up 1 and 2, an aggregate odds ratio is reported for the associations between exposures and these outcomes overall by follow up 2.

Associations between family type and outcomes

In unadjusted analysis, girls from lone parent and teenage mother initiated families were more likely to report sex, but were not more likely to report non-use of contraception by follow up 2 (table 2). Adjusting for SES reduced but did not remove the association among girls between having a teenage mother family and increased likelihood of sex by follow up 2 (table 4). There was a significant interaction among girls between lone parent family and parental employment in their association with sex by follow up 2 ($p = 0.038$). Among girls with a parent in employment, those from lone parent families were more likely to report sex by follow up 2 (odds ratio = 1.73, confidence internal 1.43 to 2.08). Among girls with no employed parent, there was no such association (odds ratio = 0.91, confidence interval 0.54 to 1.54). Girls with a teenage mother, but not those from a lone parent family, were more likely to conceive by follow up 2. Despite a high point estimate, the confidence interval for this association was wide and the point estimate was substantially reduced on adjustment for SES.

In unadjusted analysis, boys from lone parent and teenage mother families were more likely to have sex and initiate a pregnancy by follow up 2 but not to report non-use of contraception at first sex (table 3). Adjusting for SES measures reduced the associations between family type and conceptions but had little effect on the associations with sex by follow up 2 (table 4). There was a significant interaction among boys between lone parent family and teenage mother family in their association with sex by follow up 2 ($p = 0.015$). Compared with boys from two parent families and non-teenage mothers, boys from lone parent families with non-teenage mothers were more likely to report sex by follow up 2 (odds ratio 1.32 (1.02,1.69)). However, boys from lone parent families who had teenage mothers were not more likely to report sex by follow up 2 (odds ratio 1.29 (0.66,2.54)).

What we already know

- Recent data suggest that in Britain young people from lone parent families and those born to young parents are at increased risk of teenage pregnancy although some of these associations are explained by socio-economic status.
- The effects in Britain of parenting style on these outcomes is little researched.

What this study adds

- Young people from lone parent families or having mothers who were teenagers when they were born are more likely to report early sexual debut and (except for girls from lone-parent families) conceptions by age 15/16.
- These associations are unlikely to be explained by the style of parenting experienced by these young people.

Effect of adjustment for parenting behaviours on associations between family type and outcomes

Bivariate analysis identified the following associations between parenting measures and our outcomes: low parental strictness, difficult parent-child communication, and lack of parental input into sex education were associated with first sex by follow up 2 among girls; difficult communication was associated with conceptions among girls (table 2); and low strictness was associated with sex by follow up 2 among boys (table 3). The effects of adjusting in turn for these parenting measures on the associations found between our primary exposures and outcomes reported above were examined (table 4). Adjusting for difficult parent-child communication further reduced the association between teenage mother initiated family and conception among girls. Adjustment had minimal effects on all other associations among either girls or boys. Adjustment also had minimal effects on the interactions reported above.

DISCUSSION

Our results largely support our first hypothesis that family type influences likelihood of teenage conception. Regarding behaviour, adjusting for SES, girls and boys from lone parent families, or born to teenage mothers, were more likely to report sex by age 15/16 but not non-use of contraception at first sex. The lack of associations regarding our contraception measure might reflect this measure, unlike early sexual debut not being a validated predictor of teenage pregnancy.[10] Our longitudinal analysis supports those of previous cross sectional studies.[10] Regarding conceptions, we found that girls and boys born to teenage mothers, and boys but not girls from lone parent families, were more likely to report conceptions by age 15/16. Adjustment for SES reduced these associations; we lacked sufficient conceptions to enable precise estimates of adjusted associations.

Our results provide less support for our second hypothesis, that parenting behaviours explain the effects of family type on young people's sexual behaviour and likelihood of conception. Despite there being some associations between certain parenting behaviours and outcomes, only in the case of difficult parent-child communication and the association between teenage mother family and conception among girls did it seem that parenting behaviours might partially explain associations between family type and our outcomes. Our finding here is in line with the little previous UK research on this topic,[12] although as stated above contraception use at first sex, despite its use as an outcome in some teenage pregnancy prevention studies, is not a validated predictor of teenage pregnancy.

Policy implications

Interventions to influence the parenting styles of lone and/or young parents are unlikely to influence risk of teenage pregnancy among their children.

Our finding that girls from a lone parent family are more likely to report sex by age 15/16 only if their parents were in employment might be regarded by those influenced by Lewis, Joseph, and Murray as evidence of parenting ''deficits'' among employed lone parents. However, given the lack of evidence we found for such parenting behaviours mediating the effects of lone parent families, this seems unlikely. It may be that young people with employed lone parents view early sex/parenting as compatible with a career, whereas those from jobless households do not. We have no easy explanation for our finding that boys from lone parent families with non-teenage, compared with teenage, mothers were more likely to report sex by follow up 2. Perhaps those with older lone parents are more likely to have previously lived with parents who then separated, this affecting boys' attitudes and behaviour concerning sex and relationships.

Our study provides an up to date assessment of longitudinal associations between lone parent family and conceptions reported by young men and women in the UK, and explores for the first time associations between teenage mother family and subsequent conceptions involving UK boys, as well as providing up to date information on this among UK girls. It is the first UK study to examine family effects on young people's sexual behaviour using longitudinal data, and to explore comprehensively whether parental behaviours can explain associations between family type and risk of teenage conceptions.

Our study has several limitations. Our measure of teenage mother initiated family will not have detected those whose mother was a teenager when she gave birth to an older sibling. Our categorisation of students as being from a lone parent family if they did not report living with a father/stepfather and a mother/stepmother may have resulted in some but not all families involving unmarried heterosexual or same sex couples, each of whom are regarded as parents, being incorrectly categorised as lone parent families. Our analysis did not involve sufficient numbers of pregnancies to permit precise estimation of associations. Although our rates of follow up were high and there is no evidence in table 1 of differential exposure specific attrition by follow up 1, it is conceivable that exposure specific differential attrition by follow up 2 could have occurred, which may have produced some selection bias. In interpreting our results some caution should be applied as the number of associations examined may have produced a small number of positive results by chance. Exclusion from analysis of those who had already had sex at baseline, although necessary to enable examination of the temporality of associations between our exposures and outcomes, means that our findings cannot be generalised to the very few young people who initiate sex as early as age 13/14.

Despite these limitations, we can conclude that among a sample of students in English schools born in 1983/84, those from lone parent families or who have mothers who were teenagers when the students were born are more likely to report early sexual debut, which is predictive of teenage conceptions, as well as conceptions by age 15/16. With the exception of the association between teenage mother family and girls' conceptions being partly explained by difficult communication, the effects of family on sexual behaviour and our outcomes are not explained by our measures of the style of parenting they received. Our research thus raises doubts about the empirical validity of the work of Lewis,[13] Joseph,[14] and Murray,[15 16] which argues that the poor quality of parenting within certain family types can explain teenage pregnancies among children.

Further research is required to explain associations between family structure and likelihood of teenage conceptions. Possibilities to explore include the continuity of care input by specific people, whether these be parents or other persons. A further avenue for future research might be to examine the effects of family type, not by categorising families only in terms of whether they deviate from one particular model of family life, but by exploring the diversity of family forms, in terms of their actual attributes, such as presence of grandparents or location within wider social networks using qualitative as well as quantitative data.

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